AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

1.   (previously presented):   A method of optimizing a topology of a serial bus having

a plurality of nodes each with communication ports, comprising the steps of:

prioritizing said nodes according to the number of said communication ports and a

transmission speed of said nodes, such that nodes of higher speed have higher priority than nodes

of lower speed and nodes of equal speed are prioritized so that nodes having more of said

communication ports have a higher priority than nodes having fewer of said communication

ports;

connecting a non-used port of the node of the highest priority with a port of the node of

the next priority; and

repeating the connecting step until all of said nodes are connected together, whereby said

nodes are connected through said communication ports according to priority order.

2. (Original)   A method as defined in Claim 1, wherein the step of prioritizing is

performed so as to firstly assign higher priority to the node of greater transmission speed, and

then to secondly assign higher priority to the node having greater number of said ports.

3. (Currently amended)   A method of optimizing a topology of a serial bus having a

plurality of nodes each with communication ports, comprising the steps of:

comparing a total number of ports of all of said nodes with a reference value varying with the number (N) of said nodes to determine whether a prerequisite for constructing said topology is satisfied, the prerequisite being that the total number of ports of all of said ports is not less than 2(N-1);

prioritizing said nodes according to the number of said communication ports and a transmission speed of said nodes when said prerequisite is satisfied, such that nodes of higher speed have higher priority than nodes of lower speed and nodes of equal speed are prioritized so that nodes having more of said communication ports have a higher priority than nodes having fewer of said communication ports;

connecting a non-used port of the node of the highest priority with a port of the node of a next higher priority;

repeating the connecting step until all of said nodes are connected together; and

if no port remains in the node of the lowest priority to connect with the node of next priority during the repeating step, then separating the last connected node to assign to the node of the foremost priority among nodes in a next higher speed group than the separated last connected node ~~when no port remains in the node of the lowest priority to connect with the node of next priority during the repeating step~~, whereby said nodes are connected through said communication ports according to priority order.

4. (original): A method as defined in Claim 3, wherein the step of comparing determines that the prerequisite for constructing said topology is satisfied if the total port number of all of said nodes is equal to or greater than 2(N-1).

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5.   (original):   A method as defined in Claim 3, wherein the step of prioritizing is performed so as to firstly assign higher priority to the node of greater transmission speed, and then to secondly assign higher priority to the node having greater number of said ports.